



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,401	05/09/2001	Louis B. Rosenberg	IMM005B	5620
22903	7590	02/10/2004	EXAMINER	
COOLEY GODWARD LLP ATTN: PATENT GROUP 11951 FREEDOM DRIVE, SUITE 1700 ONE FREEDOM SQUARE- RESTON TOWN CENTER RESTON, VA 20190-5061			NGUYEN, CHANH DUY	
			ART UNIT	PAPER NUMBER
			2675	31

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/852,401

Applicant(s)

ROSENBERG, LOUIS B.

Examiner

Chanh Nguyen

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 44-50, 57-59 and 64-76 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 44-50, 57-59 and 64-76 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment filed on December, 2003 has been entered and considered by examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 44-47, 57, 59, 64-67, 70, 72-73 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adelstein (A Virtual Environment System For The Study Of Human Arm Tremor) in view of Rosen (U.S. Patent No. 5,107,080).

As to claim 44, Adelstein discloses the apparatus as recited in claim 44 with exception of describing the limitation "a translational degree of freedom" and the first and the second central members being coupled to the user object via a first object coupling and a second object coupling. For example, Adelstein teaches an apparatus including a user object (a handle shaft having hand grip for a user to hold the joystick as shown in Figures 4.3, 4.6). Adelstein teaches a closed loop five member linkage joystick mechanism configured to enable the user object to move in first and second rotary degrees of freedom, Figure 4.3 which is exactly the same as applicant's disclosed claimed device shown in Figure 2. Adelstein teaches the closed loop five member

Art Unit: 2675

linkage including a serial linked chain of a ground member (e.g., ground member labeled as j1, j2), a first extension member (e.g., member connecting between points J5 and j4) and a second extension member (e.g., member connecting between points j4 and j1). Adelstein teaches one central member coupled to user object through an object coupling (e.g., point J5) whereas claim recites two central members. Adelstein teaches at least one sensor coupled to the closed -loop five member linkage and operative to detect a movement of the user object in at least one degree of freedom (see page 64 and page 78, last paragraph). In the same field of endeavor, Rosen teaches a joystick mechanism enable the user object (28) in a translation degrees of freedom (z direction) (see column 4, lines 54-68 and column 5, lines 45-52). Even Adelstein suggests six degrees of freedom mechanism including translational axis using link mechanism (see page 48, third paragraph). Rosen clearly teaches a first central member (e.g., outer shaft 18) and a second central member (e.g., inner shaft 30) being coupled to the user object (28) via a first object coupling (e.g., 20) and a second object coupling (e.g., 27). Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have use Z axial a translation force applied to the handle shaft as taught by Rosen to the handle shaft of Adelstein so as to provide a simple damping mechanism having Z translation handle movement (see column 2, line 4 of Rosen).

As to claim 57, this claim differs from claim 44 only in that the limitation "laparoscopic surgical instrument" is additionally recited. It would have been obvious to one of ordinary skill in the art the device of Adelstein can be used as laparoscopic surgical instrument since it depends upon the environment or application the instrument

Art Unit: 2675

is connected to. For example, a joystick can be used in game application, but it also can be used in general office application such as selecting icons. Moreover, it is well-known in the art to use joystick mechanism for laparoscopic surgical instrument (i.e. the reference Jacobus et al U.S. Patent No. 5,769,640) clearly teaches laparoscopic surgical instrument).

As to claim 45, Adelstein clearly teaches the user object including a grip portion (handgrip 2) and an elongate portion (handle link 1) ; see Figure 4.6

As to claim 46, this claim is analyzed as previously discussed with respect to claim 57.

As to claims 47 and 73, Adelstein clearly teaches a transducer coupled to the grip portion of the user object, the transducer response to a relative motion of the handgrip (see page 101, Transducer and Electronic Conditioning).

As to claim 59, Adelstein teaches at least two actuators for two degrees of freedom. Rosen teaches another actuator for translational degree of freedom. Thus, combining Adelstein and Rosen would meet the claimed limitation.

As to claims 64, 66, 72, the limitation "laparoscopic instrument" and "medical procedure" is previously discussed with respect to claim 57 above.

As to claims 65 and 67, Adelstein clearly teaches sensor and force feed back correlated with the virtual reality (see pages 23, 26, 101).

As to claims 70 and 76, Adelstein clearly teaches actuator including a motor (see page 90, section 4.3).

Art Unit: 2675

4. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosen in view of Adelstein as applied to claim 44-45 above, and further in view of Scott-Jackson et al (U.S. Patent No. 4,590,339).

As to claim 48, note the discussion of Rosen and Adelstein, both do mention a finger wheel positioned on the grip portion. Scott-Jackson teaches wheels (121, 123, 125) recessed into the base of the handle (see Figure 5 and column 6, lines 5-9), but it would have been obvious the wheel (121, 123, 125) can be positioned on the grip portion so that a user does not have to leave his/her hand from the handle for activating the wheels. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the finger wheel of Scott-Jackson on the grip portion of Adelstein as modified by Rosen so that the device can perform different functions than translation and rotation such as switching from one type machine to the other (see column 7, lines 27-39 of Scott-Jackson).

5. Claims 49-50 and 74-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adelstein in view of Rosen as applied to claim 44 above, and further in view of Tuason (U.S. Patent No. 5,403,191).

As to claims 49-50 and 74-75, note the discussion of Adelstein and Rosen above, Adelstein and Rosen do not mention a barrier and a trocar. Tuason teaches a trocar (24) and a barrier (17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the trocar and barrier as taught by Tuason on the apparatus of Adelstein as modified by Rosen so as to allow a

Art Unit: 2675

surgeon to perform the simulation resemble real life operation; see column 6, lines 3-11 of Tuason.

6. Claim 58, 68-69 and 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adelstein in view of Rosen as applied to claim 57 above, and further in view of Massie et al (U.S. Patent No. 5,625,576).

As to claims 58 and 68, note the discussion of Adelstein and Rosen above, Adelstein and Rosen do not mention capstan mechanism. Massie teaches capstan mechanism (e.g., 134); see column 11, lines 32-54. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the capstan as taught by Massie to the apparatus of Adelstein as modified by Rosen so as to allow for higher tension with lower friction than a conventional simple loop configuration; see column 11, lines 50-54 of Massie.

As to claim 69, the limitation "capstan drum, cable and a pulley" is met by Massie (see column 10, lines 39-40 and column 11, lines 32-54).

As to claim 71, braking mechanism is well-known in the art, even broadly reads on friction caused by mechanical elements in the Adelstein or Massie's devices.

Response to Arguments

7. Applicant's arguments with respect to claims 44-50, 57-59 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2675

In view of amendment, the elements 20 and 27 in the references of Rosen are analyzed as first and second object couplings for a new ground of rejection.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chanh Nguyen whose telephone number is (703) 308-6603.

If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Steven Saras can be reached at 305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121
Crystal Drive, Arlington, VA, Sixth Floor (Receptionist)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


CHANH NGUYEN
PRIMARY EXAMINER